

System and Method for Protecting Equipment From Damage Due To Low or Rapidly Changing Temperatures

ABSTRACT OF THE DISCLOSURE

A system and method of protecting production tooling used in semiconductor fabrication from potentially damaging low temperatures or sudden temperature drops during periods of primary power outage and low outside temperatures. The boilers and pumps at a central utility plant (CUP) which normally provide superheated water under pressure to heat exchangers in each building to be heated are cut back to a fraction of their normal heating capacity during periods of primary power outage, although air continues to be exhausted from, and outside air taken into fabrication buildings. In the present invention, an additional heat exchanger is placed in each building which houses production tooling, and the coolant from the engine used to drive the generator for powering the air handling equipment in the building may be selectively directed through one of the flow paths of the second heat exchanger. Water which circulates through the building heater(s) to heat the air entering the building passes through the first heat exchanger, picking up heat from the water heated at the CUP, after passing through the second heat exchanger, picking up heat from the engine coolant.. This augmentation of the heat provided to the fabrication areas during periods of primary power outage and low outside temperatures prevents the aforesaid damage in all reasonably foreseeable weather conditions.